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REPORT OF THE PROGRAMME AND BUDGET COMMITTEE

Electronic data-processing programme

Report by the Director-General

Summary

In compliance with General Conference decision GC.4/Dec.18, paragraph (h), reports on action taken as of 30 September 1992 on the programme and cost of implementing the recommendations of Touche Ross Management Consultants, of Andersen Consulting, and of the External Auditor, as contained in documents GC.4/CRP.1, GC.4/50, IDB.10/4 and a consultancy report presented at a briefing on 24 June 1992.

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1. The General Conference in its decision GC.4/Dec.18, inter alia, took note of the updated report by the External Auditor on the electronic data-processing (EDP) system (GC.4/50), of the follow-up report by the Director-General on the recommendations of the External Auditor (GC.4/48 and Corr.1) and of the final report of Touche Ross Management Consultants (GC.4/CRP.1) and requested the Director-General, inter alia, to report to the subsequent sessions of the policy-making organs on the programme and cost of implementing the consultants' recommendations (GC.4/CRP.1) and those of the External Auditor (GC.4/50).

2. In compliance with that decision, information was provided to the Board at its ninth session regarding the status of action taken with respect to those recommendations as of 30 April 1992 (IDB.9/12 and Add.1). The present report provides an updated status of action taken with respect to the recommendations of Touche Ross Management Consultants and those of the External Auditor (GC.4/50 and IDB.10/4) and the recommendations that resulted from phase two of the "Strategic Automation Plan for UNIDO" in the report of the external consultants, Andersen Consulting, the highlights of which were presented in a management summary at a briefing to Member States on 24 June 1992.

3. Annex I provides those details, based on the recommendations of the two external consultancies. Annex II contains the recommendations of the External Auditor and the most recent action taken to implement them. As in the previous report on the EDP programme (IDB.9/12 and Add.1), annex III shows the 1992 cost of implementing that programme, updated as of 30 September 1992.

4. No new contractual commitments have been entered into since April 1992. Hence table 2 in the annex to document IDB.9/12/Add.1 remains valid.

5. In accordance with paragraph (i) of decision GC.4/Dec.18 in which the General Conference requested the Director-General to keep Member States fully apprised of the EDP programme, the next briefing on the subject was scheduled for 23 October 1992.

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Annex I

STATUS OF ACTION TAKEN ON PRIMARY RECOMMENDATIONS
OF TOUCHE ROSS MANAGEMENT CONSULTANTS[1]
AND OF ANDERSEN CONSULTING[2]

PRIMARY RECOMMENDATIONS	CURRENT STATUS
1. There is a need for a systematic review of procedures within UNIDO. This review must come about from a management initiative and cannot be led by EDP. There is too much duplication of effort and too much reliance on paper-based methods. (8.1.2)	1. As part of the second phase of the strategic automation plan it was recommended that a systematic review of procedures should be considered in administrative and substantive areas. The Department of Administration is streamlining its procedures with the primary focus on eliminating duplication of effort and reducing paper flow. Constructive revisions would have a direct impact on procedures currently in use in substantive Departments, warranting the re-organization of administrative support in those areas.
2. Charge codes for use of computer time should be set up, at a level low enough to ensure the collection of meaningful statistics, to be used as the basis for charging users. (8.1.1)	2. Reported in IDB.9/12.
3. An information technology steering group should be created. This group should ensure that distraction of EDP from their main task is minimized. (8.1.1)	3. Reported in IDB.9/12.
4. The information technology steering group should identify and sanction any proposed changes to packages. (8.1.3)	4. Based on the existing relationship with suppliers a number of cost reductions have been achieved to date. In line with the recommendation of Touche Ross, Andersen Consulting followed up on the subject and recommended that, in order to fully utilize the features of ADABAS and NATURAL, additional software packages be acquired as needed in the course of implementing the strategic plan. Proposals for acquisition of major packages will be presented to the Information Technology Steering Committee (ITSC).
5. Extensive training of EDP will be required in the use of new methods and tools. (8.1.3)	5. As a follow-up to this recommendation staff of the Management Information Services (MIS) were trained in NATURAL and related products in early 1992. In addition, a course on the Structured Systems Analysis and Design Methodology (SSADM) and Computer Aided Software Engineering (CASE) tools, including project management was completed in early September.
6. Further investment in current systems should be avoided. Maintenance of existing systems must be restricted to changes which are absolutely essential, even if this will undoubtedly lead to dissatisfaction in the user community. The commitment of management is vital to maintain the support and understanding of the user community during this difficult period. (8.1.3)	6. As part of their report Andersen Consulting have identified projects and made specific recommendations regarding priorities, inter alia, to give highest priority to those projects to reduce costs or which can immediately contribute towards an expansion of services related to the priority areas highlighted in the medium-term plan. The consultants estimated the total staff resources required for the recommended projects to be 660 staff-months, plus the equivalent of 130 staff-months of user involvement. Taking into account the current staffing level the implementation will not be completed before

[1] References in the column "Primary recommendations" refer to sections of the final report of Touche Ross (GC.4/CRP.1)

[2] Strategic Automation Plan - Phase 2 Final Report, Vienna, 16 June 1992

	1997. Priorities will be discussed by ITSC and adjusted to best fit the information needs of the Organization. MIS is preparing a plan to reach a balance of resources assigned to implementing new projects and maintaining or enhancing existing systems, taking into consideration additional recommendations of Andersen Consulting. These call for a reduction of maintenance to an essential minimum, the use of a "release" maintenance management concept, and the application of software re-engineering tools for major existing systems. Following on the ITSC meeting and in accordance with the recommendations of Andersen Consulting the understanding and support of management and the user community will be strengthened by appointing user liaisons or focal points at the divisional level for improved communication.
7. The use of package application software should be viewed as a primary source of new systems. (8.1.3) The option of obtaining a suitable package should be considered first and, only after dismissing this possibility should the option of developing in-house be considered. (8.3.1) Packages should only be chosen where the amount of customization needed can be kept to a minimum. (8.3.1) Changes to packages should be kept to a minimum and reflect only changes which are essential. (8.1.3)	7. Andersen Consulting have considered the use of package application software, but recognized that specialized requirements of applications limit the selection of package software. The recommendation to consider the option of using standard application software as an alternative to in-house development will be followed. The decision will be subject to cost benefit analysis. The option will be part of the system development methodology and will be reflected in the analysis of all future system development projects.
8. If FINSYS/PERSYS of FAO is put in place and modifications are needed, these should be contracted out, together with future maintenance, to a third party software house rather than build another skill set within UNIDO. (8.3.1)	8. As a result of the phase two study, and in contrast to the original recommendation of Touche Ross, Andersen Consulting does not recommend implementing FINSYS/PERSYS of FAO because (i) it is based on an incompatible and outdated software platform; (ii) FINSYS is still not operational to user satisfaction; (iii) FAO defines the staff requirements for systems maintenance to be in the order of 10 to 12 staff-years per calendar year of operation. Andersen Consulting recommended that UNIDO evaluate the Integrated Management Information System (IMIS) of the United Nations Secretariat in New York instead, and, after installation there in 1994, determine if IMIS could replace the in-house developed systems for administrative support. In the meantime implementation for the most important systems will continue within the framework of the strategic automation plan.
9. Parallel running is essential in the transitional period of testing a new system. Users and EDP have to support and operate both systems. This requires an increased amount of effort from all parties. (8.1.3)	9. The implementation of the SSADM systems development methodology and CASE tools can only be successful with a high degree of user involvement, including an increased effort during the period of parallel runs. This has been considered as part of the estimates prepared by Andersen Consulting.
10. EDP will need to have in place a formal process for managing development projects, analysing user requirements and for turning the requirements into quality applications. (8.2) For this, the PRINCE methodology should be used and PRINCE project boards put in place. (8.2.1) UNIDO should acquire a project management tool, running on a PC, to assist in the control of projects. (8.2.1) UNIDO should acquire a methodology to provide EDP with a clear structure for development and give a list of tasks to be performed at each stage in the systems development life-cycle: strategic systems planning, tactical systems	10. For the management of development projects Andersen Consulting have recommended a more cost-effective project management organization and methodology. This methodology is being established now; it will be supported by the use of a commercial project management tool. Both methodology and tools were discussed at a meeting of ITSC, and will be presented to that Committee again as part of the implementation policy. Based on the recommendations of Andersen Consulting UNIDO has selected SSADM for analysis and design, and has acquired this methodology together with a matching CASE tool. Two pilot projects using the methodology and

planning, systems analysis and logical design, selection of packages, building of custom-written systems, systems implementation. Automated tools should also be acquired to support the analysis and design stages (CASE tools). (8.2.2)	tools have been finalized with the assistance of those consultants, and a training course for development staff has taken place (cost AS 128,000).
11. DB2, CSP, AS, C, Fortran, Oliver and the VM products should be cancelled. ADABAS and NATURAL should become the strategic database products of UNIDO. (8.3.1, appendix II)	11. Reported in IDB.9/12.
12. No further new development work should be carried out using ADS1. (8.3.1)	12. Reported in IDB.9/12.
13. Better communications with the field need to be put in place. In the long-term, if and when it can be cost-justified, computer-based communications can be considered. (8.1.1)	13. Andersen Consulting has defined a project and provided a project description, in order to plan further investments in communications links, based on the requirements of the Organization and taking into account the facilities already available in most countries. This project will be an important part of the overall strategic plan.
14. The cabling programme should be resumed with the wiring of six floors in 1992-1993 and the remainder in 1994-1995. Priority should be given to those floors with greatest needs. (8.3.2)	14. Two floors have been cabled in 1992. It is further planned to cable two additional floors in late 1992/early 1993, after which only eight floors will remain to be cabled in future bienniums.
15. PCs in EPL/LD must be connected by means of a LAN. (8.3.2) The Wang VS processors should be phased out in approximately two years. (8.3.2, 8.3.3)	15. Phasing out of Wang equipment and full conversion to WordPerfect can be contemplated when sufficient funds are available for the acquisition of the hardware and software required. This will constitute a significant cost within the programme. Estimated costs ($460,000) have been included in the budget plan for the 1994-1995 biennium. Detailed estimates will be available once all technical details have been specified and competitive bidding has been completed.
16. To remove the Wang systems it will be necessary to adopt a standard of WordPerfect across UNIDO. (8.3.3)	16. Andersen Consulting has confirmed this recommendation. WordPerfect is included as UNIDO's text processing software in the policy as endorsed by ITSC.
17. PCs with WordPerfect must be provided to all staff who rely upon Wang for word processing. (8.3.3) Adequate training in WordPerfect must be provided. (8.3.3)	17. Together with the replacement of the Wang equipment and acquisition of software, training programmes are foreseen and are included in the budget plans for 1994-1995.
18. The acquisition of 90 PCs per biennium should go a long way towards satisfying UNIDO needs.	18. Andersen Consulting has supported the recommendation to use PCs as the primary platform for office automation activities (word processing, presentation graphics, electronic spreadsheets). For that purpose, as well as to support additional mainframe applications, 75 complete sets will be acquired in 1992-1993. It is envisaged that a similar number can be acquired in future bienniums, but owing to budgetary constraints, until the required coverage is reached, only 5 per cent of the acquired hardware can be used to replace obsolete or malfunctioning equipment.

Annex II

STATUS OF ACTION TAKEN ON RECOMMENDATIONS
OF THE EXTERNAL AUDITOR

PRIMARY RECOMMENDATIONS	CURRENT STATUS
1. A system should be established to spread all EDP non-staff costs among different user Departments. (GC.4/50, paras. 12, 45, 46)	1. A system to distribute non-staff costs to Departments is in place. The introduction of a project management methodology for information system development projects will result in applications development staff recording their time against specific projects. It is expected that during the next biennium a system to distribute staff costs for applications development and maintenance will be in place.
2. There is a need for other external consultancy services in order to proceed with implementation of the more technical Touche Ross recommendations as well as for other technical and organizational issues. (GC.4/50, paras. 15, 39, 61)	2. Phase two of the strategic automation plan was completed by Andersen Consulting with the preparation of a final report on 16 June 1992, and discussed at the briefing to Member States on 24 June 1992.
3. A disaster recovery plan should be worked out which would enable both UNIDO and IAEA to mutually provide a backup computer installation at no additional costs. (GC.4/50, paras. 16, 62-65)	3. The mainframe system disaster recovery planning is progressing along similar lines as the New York Computing Centre. Negotiations with IAEA are continuing with regard to a cost-free mutual back-up computer installation. Draft of guidelines for disaster recovery planning is available.
4. An information technology steering group should be established. (GC.4/50, paras. 17, 66-70)	4. Reported in IDB.9/12.
5. A system for managing, controlling and auditing automation projects should be introduced. (GC.4/50, paras. 18, 71-75)	5. Status reported under recommendation No. 10, annex I.
6. While UNIDO is making a major investment in modern information processing technology and techniques it is of vital importance for the realization of the Organization's goals to benefit as soon as possible from that investment without supplementary costs. This can be achieved mainly by increasing the efficiency and effectiveness of data processing and distribution. (IDB.10/4, para. 177)	6. The introduction of a methodology for information systems development; the application of CASE tools and project management; the re-organization of MIS Division which will result, inter alia, in improved forward planning to introduce the concepts of distributed processing; the creation of a handbook for systems development, as recommended by Andersen Consulting; and a user guide to UNIDO applications will increase the efficiency and effectiveness of data processing within the programme as indicated in document GC.4/CRP.1.
7. A major objective should be intensive training of the existing EDP staff in the use of modern data-processing techniques and tools, and of the end-users regarding the relevant applications and software packages. (IDB.10/4, para. 178)	7. MIS training accomplishments are reported above (para. 5, annex I). Andersen Consulting further recommend a training plan for MIS staff to enhance analyst skills, to build PC and PC-networks skills, to integrate PC and mainframe applications, and to build a basic knowledge of industry or de facto standards and new trends. For end-users, the existing PC software training will continue. In addition, in line with the standards for implementation and maintenance recommended by the consultants, new applications will include procedure and end-user documentation manuals and a training component to be conducted by developers.
8. Standards should be established and complied with, throughout the Organization as a whole, regarding the use of software packages (i.e. word processing, database products, spreadsheets) thus enabling the transfer of any document without conversion problems and/or duplication of efforts. (IDB.10/4, para. 179)	8. The first such standards regarding hardware and basic software have already been approved by ITSC, which will continue to do so as technology changes and/or the need arises. Andersen Consulting have recommended the integration of mainframe and PC applications. As a first step to simplify document and

	information transfer between platforms, an improved link was established between the mainframe and PCs to allow the transfer of data. Implementation of standard word processing is progressing within the limits of the budget.
9. It is also of great importance that EDP staff as well as the end-users will be highly motivated to accept the (new) tools and applications as a valuable support to their work. This applies to UNIDO staff at Headquarters as well as for field staff. (ID8.10/4, para. 180)	9. With ITSC as the appropriate body to accept tools, applications and training as well as the involvement of user liaisons or focal points within the Secretariat, it is expected that the required high motivation level will be maintained. MIS was restructured to provide better service to relevant areas of UNIDO.

Annex III

COST OF IMPLEMENTATION, 1 JANUARY - 30 SEPTEMBER 1992

(In US dollars at US$ 1 = AS 12.90)

	1992 allotments (1)	Disbursements 1/1-30/9/92 (2)	Obligations (3)	Expenditure (2 + 3) (4)	Balance (1 - 4) (5)
Staff costs	1,963,300	1,431,119	16,702	1,447,821	515,479
Income	(140,200)	(106,557)	-	(106,557)	(33,643)
Mainframe					
Hardware	853,200	632,292	201,714	834,006	19,194
Software	693,200	507,544	151,320	658,864	34,336
Operation and maintenance	1,057,300	1,057,300	-	1,057,300	-
Office automation					
Hardware	558,600	206,973	70,597	277,570	281,030
Software	51,000	3,759	10,114	13,873	37,127
Maintenance	376,600	221,672	95,880	317,552	59,048
Other					
Supplies and materials	256,000	39,909	36,066	75,975	180,025
Network	155,400	39,679	48,063	87,742	67,658
External computer costs	20,000	14,471	3,362	17,833	2,167
Training	143,100	99,630	14,928	114,558	28,542
Consultancy support	100,000	50,616	14,384	65,000	35,000
Software development	77,500	42,150	9,922	52,072	25,428
Income	(160,000)	-	-	-	(160,000)
Total	6,005,000	4,240,557	673,052	4,913,609	1,091,391

Notes:

1. Allotments represent the 1992 portion of 1992-1993 appropriations excluding inflation on non-staff costs.

2. Obligations include contractual commitments for 1992.